

ABSTRACT OF THE DISCLOSURE

A semiconductor laser drive apparatus and method are disclosed in order to obtain an optimal laser emission pulse that can reduce inherent light emission that may cause fogging and degradation of a photoconductor and also reduce turn on delay. Specifically, a light emission command signal is delayed at a delay unit based on a delay control signal so that a modulation signal is output. The light emission command signal and the delay signal are logically added to a command signal from an external source at a threshold signal generation unit so that a threshold ON signal is output. The modulation signal and the threshold ON signal respectively drive a modulation current switch and a threshold current switch so that a semiconductor laser drive current is generated. The threshold current is sampled according to a sample hold signal supplied from an external source and APC is performed on the sampled threshold current. In a differential quantum efficiency detection unit, an operation of determining differential quantum efficiency based on a current for obtaining a predetermined amount of light and a current for obtaining a portion of the predetermined amount of light is performed, and a light emission current is calculated. By adding the calculated light emission current and an arbitrary current that may be externally set, a modulation current for switching the semiconductor laser can be obtained.